

HERBACEOUS WIND BARRIERS

(Acre)

Code 422A

Appendix 1 - Planting rates for drill or broadcast seeding in Texas, Zone 5

PERENNIAL GRASSES ^{1/, 3/}																			
Name	Variety	Seeding rates are pounds pure live seed (PLS) per acre ^{2/, 5/}	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Land Resource Areas								Seeding Guidance	Adapted Plants by Soil Groups ^{8/}					Comments
					78C	78D	80A	80B	84B	84C	85	86A		Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	
														Maximum Seeding Dates ^{6/, 7/}					
Bluestem: big	Earl, Kaw, local harvest	6.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Well adapted in the entire Zone on loamy and sandy sites.
	Cimaron	3.4	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Performance has been good on all soil types, except where high salinity, alkalinity or excessive weed competition are problems.
Bluestem: little	Pastura, native mix	3.4	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Pastura may not be commercially available.
Bluestem: sand	Elida, Woodward	6.0	N	W	X	X	X	X		X			12/1 - 6/1	X	X	X	X		Prefers deep sand to sandy soils.
	Caucasian	1.2	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Good forage production and easily established.
	King Ranch, T-587	1.2	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Best adapted to moderately to well drained loamy to clayey soils. Optimum pH is 5.5 to 7.5.
	WW-B. Dahl	1.2	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Best adapted to well to moderately well drained sandy loam to clay loam. Not adapted to alkaline soils or wet sites.
	Ganada	1.8	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Drought tolerant. Out yielded Plains in 3 year clipping test in SE Oklahoma.
	Ironmaster	1.8	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Same adaptability range as WW-Spar, but should only be used on those soils that are iron deficient.
Bluestem: yellow	Plains, WW-Spar	1.8	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Best adapted to loamy soils. Optimum pH is 5.5 to 7.5. See appropriate specialist for other bluestem varieties that are adapted in Zone 5.
Bristlegrass: plains ^{5/}		3.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Found on sandy to medium textured soils. Palatable, short lived bunch grass.
Dropseed: sand		1.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X		Palatability is low, but provides good early grazing under good moisture conditions. Prolific seed producer.
Dropseed: spike		1.0	N	W	X	X							12/1 - 6/1	X	X	X			Seed head more contracted. Approximately same height as sand dropseed.
Dropseed: tall		1.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X		Adapted to clay and clay loam sites. Prolific seed producer.
Eastern gamagrass	Iuka, Iuka IV, Pete, San Marcos germplasm, Texas Sue	10.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X		Cover depth is 1/2 to 3/4 inches. Row seeding rate is 5.0 pounds PLS per acre. Adapted to most soils that receive greater than 25 inches of annual precipitation. Not recommended on deep or very deep sandy soils.
Eastern gamagrass	Jackson, local harvest	10.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X		Cover depth is 1/2 to 3/4 inches. Row seeding rate is 8.0 pounds PLS per acre

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1/, 3/ (Continued)																			
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					78C	78D	80A	80B	84B	84C	85	86A	Maximum Seeding Dates 6/, 7/	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	
Grama: blue	Hachita, Lovington	1.5	N	W	X	X	X	X					12/1 - 6/1		X	X	X	X	It thrives in medium to fine textured soils. Highly palatable all year long and cures well for use as hay.
Grama: sideoats	El Reno, Haskell, Niner, Vaughn	4.5	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	medium or coarse soil. May become dominant species on shallow calcareous sites.
Green sprangletop		1.7	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X		Is highly palatable. Establishes quickly and provides cover and protection to other species that are slower in establishment.
Indiangrass: yellow	Cheyenne, Lometa	4.5	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	In precipitation of less than 25 inches, performs better on coarser textured soils. It is also adapted to some finer textured soils if they are subject to overflow from adjacent sites or irrigated.
Johnsongrass		10.0	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Cover depth is 1/4 to 1/2 inches. Best adapted to clay soils.
Kleingrass	Selection-75	1.5	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Adapted for medium to clay textured soils. Withstands extended periods of hot, dry weather and is an excellent food source for game birds.
Kleingrass	Verde	1.7	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Same as above, but has a larger seed.
Lovegrass: weeping	common, Ermelo	1.5	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X			Best adapted to sandy soils. Provides excellent protection for both wind and water erosion. Provides protection for small game and is good food source for small birds.
Lovegrass: wilman	common, Palar	1.5	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Has outstanding seedling vigor and good seed production. Due to lack of cold tolerance, only plant south of the Knox to Fannin Conty line.
Lovegrass: sand, sandhill	common, Mason	1.5	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X			Occurs on sandy soils. Has good drought resistance, but lacks persistence under heavy grazing.

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					78C	78D	80A	80B	84B	84C	85	86A		Coarse	Moderately Coarse	Medium	Moderately Fine	Fine							
Sacaton: alkali, big	common, Salado, Saltalk	1.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1			X	X	X		Grows well on sites characterized by salt, alkali, drought and occassional cloudburst. Eaten by livestock when it is green, but does not cure as a palatable winter feed.					
Sorghum alnum		12.0	I	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X		Cover depth is 1/4 to 1/2 inches. Is a hybrid between Johnsongrass and a sorghum and is adapted to all soil types.					
Switchgrass	Alamo	2.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X		Is generally adapted to all bottomland soil textures. If planted, on fine and moderately fine textured soils that receive less than 25 inches of annual precipitation, these sites should be subject to overflow from adjacent sites or irrigated.					
Switchgrass	Blackwell, Caddo, Kanlow, local harvest	3.5	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X		Upland type switchgrass with good seedling vigor. Used for range reseeding, pasture planting, waterways and revegetation of disturbed areas.					
Wheatgrass: tall	Jose, Largo	12.0	I	C	X	X	X	X	X	X	X	X	8/15 - 11/1	X	X	X	X			In areas that receive less than 28" of annual precipitation, use on subirrigated sites, or sites that receives extra runoff. Cover depth is 1/4 to 1/2 inches.					
Wheatgrass: pubescent	Luna	11.0	I	C	X	X	X	X					8/15 - 11/1		X	X	X			Has excellent seedling vigor, fast establishment and is a high forage producer. Cover depth is 1/4 to 1/2 inches.					
Wheatgrass: western	Arriba, Barton, common	7.0	N	C	X	X	X	X					8/15 - 11/1		X	X	X	X		Species is best adapted to well drained bottomland, but is commonly found on open plains and hillsides. Preferred feed for some large game species. Cover depth is 1/4 to 1/2 inches.					

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PERENNIAL FORBS, LEGUMES, SHRUBS1/, 3/																				
Name	Variety	Seeding rates are pounds pure live seed (PLS) per acre2/, 5/	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Land Resource Areas								Seeding Guidance Maximum Seeding Dates6/, 7/	Adapted Plants by Soil Groups8/					Comments	
					78C	78D	80A	80B	84B	84C	85	86A		Coarse	Moderately Coarse	Medium	Moderately Fine	Fine		
Alfalfa		20.0	I	C	X	X	X	X	X	X	X	X	8/15 - 11/1	X	X	X	X		Pounds of commercial seed. Moderately deep to deep, loamy, well drained soils with a pH of 6.5 or greater.	
Awnless bushsunflower		2.6	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X				
Crownvetch		6.3	I	W						X		X	12/1 - 6/1	X	X				Best adapted to soils with a pH of 6.0 or above. Does not tolerate drought well	
Engelmann daisy		15.0	N	C	X	X	X	X	X	X	X	X	8/15 - 11/1			X	X	X	Adapted to loamy and clayey upland soils through out the Zone.	
Fourwing saltbush		15.5	N	W	X	X	X	X					12/1 - 6/1	X	X	X	X		Very palatable. Grows best in calcareous or basic soils.	
Illinois bundleflower		13.6	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Adapted to most of the upland and bottomland sites in the Zone.	
Maximilian sunflower		3.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Well adapted to a variety of sites. Prefers well drained sunny sites.	
Menodora: rough, showy		5.0	N	W	X	X	X	X	X	X			12/1 - 6/1		X	X	X	X		
Orange zexmenia		3.4	N	W	X	X	X	X	X	X		X	12/1 - 6/1	X	X	X	X			
Prairieclover: purple		3.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Grows on soils ranging from clay loams to sands. Has moderate drought tolerance.	
Prairieclover: white		2.0	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1		X	X	X	X	Grows well on high pH soils. May cause bloat.	
Western ragweed		7.5	N	W	X	X	X	X	X	X	X	X	12/1 - 6/1	X	X	X	X	X	Widespread along roadside and disturbed sites. Valuable food source for small game birds.	

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					78C	78D	80A	80B	84B	84C	85	86A	Maximum Seeding Dates 6/, 7/	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	
Barley		40.0	I	C	X	X	X	X	X	X	X	X	8/15 - 11/1	X	X	X	X	X	Cover depth is 1/2 to 1.0 inches. Is sensitive to poorly drained soils. Moderate drought tolerance.
Forage Sorghum: grass types		10.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15	X	X	X	X	X	Cover depth is 1/2 to 1.0 inches. Nitrate or prussic acid poisoning can occur in some circumstances.
Forage Sorghum: others		15.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15	X	X	X	X	X	Same as above.
Grain Sorghum		15.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15	X	X	X	X	X	Same as above.
Hegari		25.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15			X	X	X	Same as above.
	Browntop	15.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15		X	X	X	X	Cover depth is 1/2 to 1.0 inches. Adapted to a wide variety of soils, but does not do well on calcareous soils. Acceptable forage for horses.
	Foxtail	15.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15	X	X	X	X		Cover depth is 1/2 to 1.0 inches. Adapted to a wide range of soils, but performs best on loamy sites. Can cause kidney and joint problems in horses.
	Japanese	15.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15			X	X	X	Cover depth is 1/2 to 1.0 inches. Used primarily for wildlife and is adapted to wet soils.
	Pearl	15.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15		X	X	X	X	Cover depth is 1/2 to 1.0 inches. Good for hay or silage but not as drought tolerant as forage sorghums.
	Proso	15.0	I	W	X	X	X	X	X	X	X	X	3/15 - 8/15		X	X	X	X	Cover depth is 1/2 to 1.0 inches. Used primarily for wildlife food plots. Matures in about sixty days after emergence.
Millet																			
Oats		40.0	I	C	X	X	X	X	X	X	X	X	8/15 - 11/1	X	X	X	X	X	Cover depth is 1/2 to 1.0 inches. Provides early fall grazing but is not drought tolerant.
Rye		40.0	I	C	X	X	X	X	X	X	X	X	8/15 - 11/1						Cover depth is 1/2 to 1.0 inches. Provides early fall grazing and prefers sandy to loamy soils.
Triticale		40.0	I	C	X	X	X	X	X	X	X	X	8/15 - 11/1	X	X	X	X	X	Cover depth is 1/2 to 1.0 inches. Cross between wheat and rye. Optimum pH range is 5.0 to 7.5.
Wheat		40.0	I	C	X	X	X	X	X	X	X	X	8/15 - 11/1	X	X	X	X	X	Cover depth is 1/2 to 1.0 inches. Good cold and drought tolerance. Optimum pH range of 5.5 to 8.0.

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FOOTNOTES

- 1/ Species are listed by common name and where applicable by released cultivar or variety. Planting rates are shown either as by PLS or commercial rates.
- 2/ PLS = Pure Live Seed. To compute PLS from seed analysis information: Percent PLS = (% germination + % hard [dormant] seed) X % purity. Seeding rate in PLS pounds divided by % PLS will give you the bulk seeding rate needed to get the right amount of pure live seed.
- 3/ Local harvest may be used when seeding species of unknown or common variety, or natural stands. Local harvested seed should have its geographic origin within 200 miles north, 300 miles south, 100 miles east and 200 miles west of the site where it will be planted. It is also desirable that locally harvested seed be used on soils of the same texture as soils where seed was harvested.
- 4/ The TZ (tetrazolium salt) test can be used for the germination factor in figuring PLS if the dealer furnishes the seed tag or other proof the test was run by a reputable seed lab.
- 5/ Drill planting is defined as rows spaced less than 20 inches apart. Row planting rates will be 1/3 of drill rates.
- 6/ The optimum planting date for warm season perennial grasses, legumes and forbs is 1/15 - 4/15 and 9/1 - 10/15 for cool season perennial grasses, legumes and forbs. The optimum planting date for warm season annuals is 4/1 - 6/1 and 9/1 - 10/15 for cool season annuals. Seeding rates are single rates only. If special circumstances warrant a double seeding rate, contact the appropriate field or Zone specialist.
- 7/ The optimum planting depth for all species is 1/8 to 1/4 inch unless it is otherwise noted for the individual specie.
- 8/ Soil groups are based on the following textures: **Coarse** - Coarse sand, Sand, Fine sand, Very fine sand, Loamy coarse sand, Loamy sand, Loamy fine sand and Loamy very fine sand; **Moderately Coarse** - Sandy loam, Coarse sandy loam and fine sandy loam; **Medium** - Very fine sandy loam, Loam, Silt loam and silt; **Moderately Fine** - Clay loam, Sandy clay loam and Silty clay loam; **Fine** - Sandy clay, silty clay and clay. **This guidance is very broad . For site specific guidance on all grass plantings, refer to the appropriate ecological site description, pastureland suitability group, other technical guidance if needed, and the appropriate Zone or Field specialist.**